Chapter

3

LIVABLE COMMUNITIES HANDBOOK

Land Use and Design Strategies for the South Bay Cities

Strategies for Light Industrial Areas

3.1 INTRODUCTION

Large expanses of light industrial land are scattered throughout the South Bay. These areas support a variety of industrial, office and retail uses. Most of these areas offer employees few if any amenities either at their work site or nearby.

Some South Bay light industrial areas are undergoing a transformation to cleaner, technology-based uses. Large format retail projects are also being built. Most of these projects, however, perpetuate the existing auto-dominant urban form. Yet this transformation increases the opportunity to develop mixed-use centers that incorporate livable community principles.

Through public investment and redevelopment, these areas have the potential to become much more livable places and greater assets to the community.

3.1.1 Definition

Light Industrial areas have the following characteristics:

- Large lots;
- Little or no housing;
- Typically a high percentage of truck traffic;
- Light industry, office park or general commercial zoning;
- Building stock dominated by large, one- or two-story manufacturing and warehousing structures set well back from the street;
- Large parking lots or structures;
- Frequently incomplete sidewalk network;
- Poor transit service (with the exception of areas served by the Green Line);
- Few trees and little other landscaping.

Light industrial uses are scattered throughout the South Bay, with some bordering on residential or retail areas. The land uses include light manufacturing and assembly, warehouses, transportation terminals, industrial offices, and research and development (R&D). Light industrial areas can be found in many South Bay cities including:

Carson between Main St. and Figueroa St., north of Carson St.

Carson along Wilmington Ave between 223rd St. and Lomita Blvd.

El Segundo between Sepulveda, Douglas, Grand and I-105

Gardena north of Rosecrans Ave., between Van Ness Ave. and Budlong Ave.

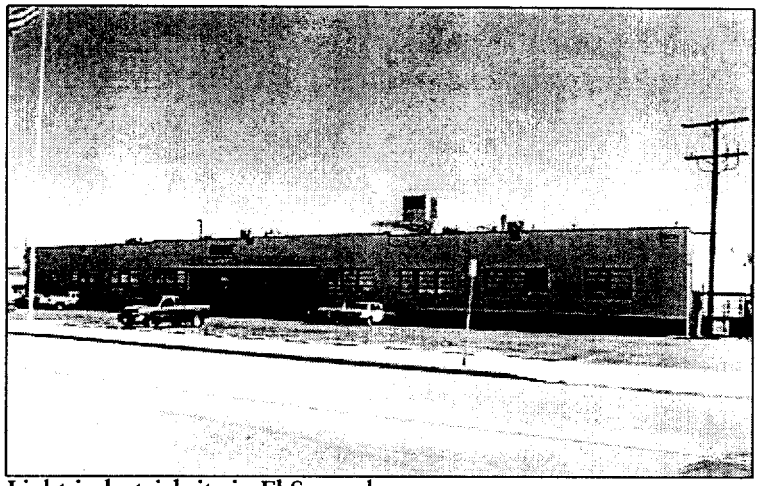
Hawthorne north of Rosecrans Ave., between Yukon Ave. and Crenshaw Blvd.

Inglewood between Beach Ave., Florence Ave. and La Cienega Blvd.

Torrance between 190th St. and Torrance Blvd., east of Hawthorne Blvd.

Torrance along Lomita Blvd., between Hawthorne Blvd. and Crenshaw Blvd.

There are also a number of isolated light industrial parcels within commercial and residential areas. Some of these sites now sit vacant.



Light industrial site in El Segundo

3.1.2 History

Large portions of the South Bay were originally developed for industrial uses. These areas typically offer good rail and highway access and close proximity to the Los Angeles and Long Beach ports and LAX, making them a natural choice for industrial development. The major heavy industrial facilities in the South Bay are well established and therefore unlikely to undergo significant change in the foreseeable future.

Some of the light industrial areas, however, are undergoing a profound transition, spurred by the changing structure of the Southern California economy and rising land values. The tremendous growth in trade through the ports and LAX is driving demand for more warehousing and trucking facilities. Traditional lower-skilled manufacturing jobs are been replaced by higher-skilled R&D jobs. Some manufacturing sites have been developed as office parks typically containing a mix of offices, warehouses, manufacturing and R&D. At the same time, the large lots and growing popularity of large format retail stores have led to this kind of development, mostly on the perimeter of some light industrial areas.

3.2 LIVABLE COMMUNITIES OBJECTIVES

Most South Bay light industrial areas exhibit large lots, large building footprints, and large setbacks - features that discourage pedestrian activity and mixed use. These areas typically lack the restaurants, childcare facilities and outdoor seating areas that workers might access by foot if available.

In addition, many South Bay light industrial sites are adjacent to residential areas with little buffer. Yet pedestrians wishing to walk from the residential neighborhoods into the light industrial areas face circuitous routes down long blocks on narrow sidewalks with few amenities.

Most people do not think of light industrial areas as potential livable communities. Many of the core principles of livable communities - pedestrian-oriented development, mixed housing and commercial, small retail - are difficult to envision. Yet the livable communities concepts can be a powerful strategy to improve the quality of life, particularly in those light industrial areas that are undergoing a transition to cleaner uses.

Many South Bay light industrial areas are in the midst of change. In a survey of South Bay planners, the cities of El Segundo, Manhattan Beach, Redondo Beach and Torrance all identified industrial sites as among those most likely to receive redevelopment in the coming years.

South Bay cities should capitalize on this shift and encourage the appropriate development of multi-family housing and small retail in a walkable environment.

3.2.1 Short Term

In the short term, South Bay cities should work to attract new development to vacant and underutilized parcels while improving the conditions of current employees. Higher density offices should be encouraged, particularly close to Green Line stations.

Workers in these offices will create demand for daytime retail and services. In the case of new or expanded light manufacturing or warehouse facilities or new large format retail outlets, site design requirements should include the creation of more attractive streetscapes, better pedestrian access and outdoor gathering areas.

Carefully targeted public investments can also help create the conditions for livable communities. Appropriate investments include the completion of sidewalk systems, the installation of trees, streetlights and transit stops, and constructing traffic calming devices at appropriate locations, particularly in residential neighborhoods bordering light industrial areas.

Some unused light industrial buildings may be beyond repair, while others, with some

work, may be available for re-use. Buildings along the perimeter of light industrial areas may be suited for retail by subdividing and adding awnings, signage, and landscaping. Reusing existing structures can help to reduce initial costs for new establishments and reduce the environmental impacts of development.

3.2.2 Long Term

The long-term function of these areas will depend on large economic forces. South Bay cities can, however, help mold the uncertain future. For example, multifamily housing should be encouraged in areas dominated by offices and research and development. In other areas, large format retail can form the basis for the development of walkable commercial districts.

Many of the strategies for these various options are similar. The important thing is to ensure that each new development includes livable community concepts that leave the widest possible future options.

3.3 LIVABLE COMMUNITIES STRATEGIES

Light industrial areas can be the most challenging in which to implement livable community strategies. Figure 3.1 presents a composite plan view of the typical existing conditions in a South Bay light industrial area bordering a residential neighborhood. It illustrates many of the land use and design issues. Figure 3.2 presents the same plan transformed by livable communities strategies. Descriptions of these and other issues and strategies are detailed below.

3.3.1 Land Use

The potential for light industrial areas to become more livable places depends a great deal on how redevelopment alters the existing type and intensity of land uses. In most light industrial areas, the building stock consists of large single-story warehouses and light manufacturing facilities that can be difficult to recycle into other uses. Environmental contamination may exist on some sites from a previous use, further hindering the prospect of redevelopment.

Low density can make it difficult to travel between sites by foot. Individual buildings are typically set far apart and are separated by large expanses of asphalt, long walls and minimal landscaping. Many of the existing industrial uses may be incompatible with certain types of new development, particularly residential.

Within these seeming problems, however, lie opportunities. Large setbacks represent land that is currently underutilized and can be recycled. Vacant parcels, sometimes spurred by the evolving economy, offer additional development sites and an opportunity for increased city tax revenue. Many of the streets in light industrial areas

Figure 3.1 Existing Conditions, Light Industrial Area

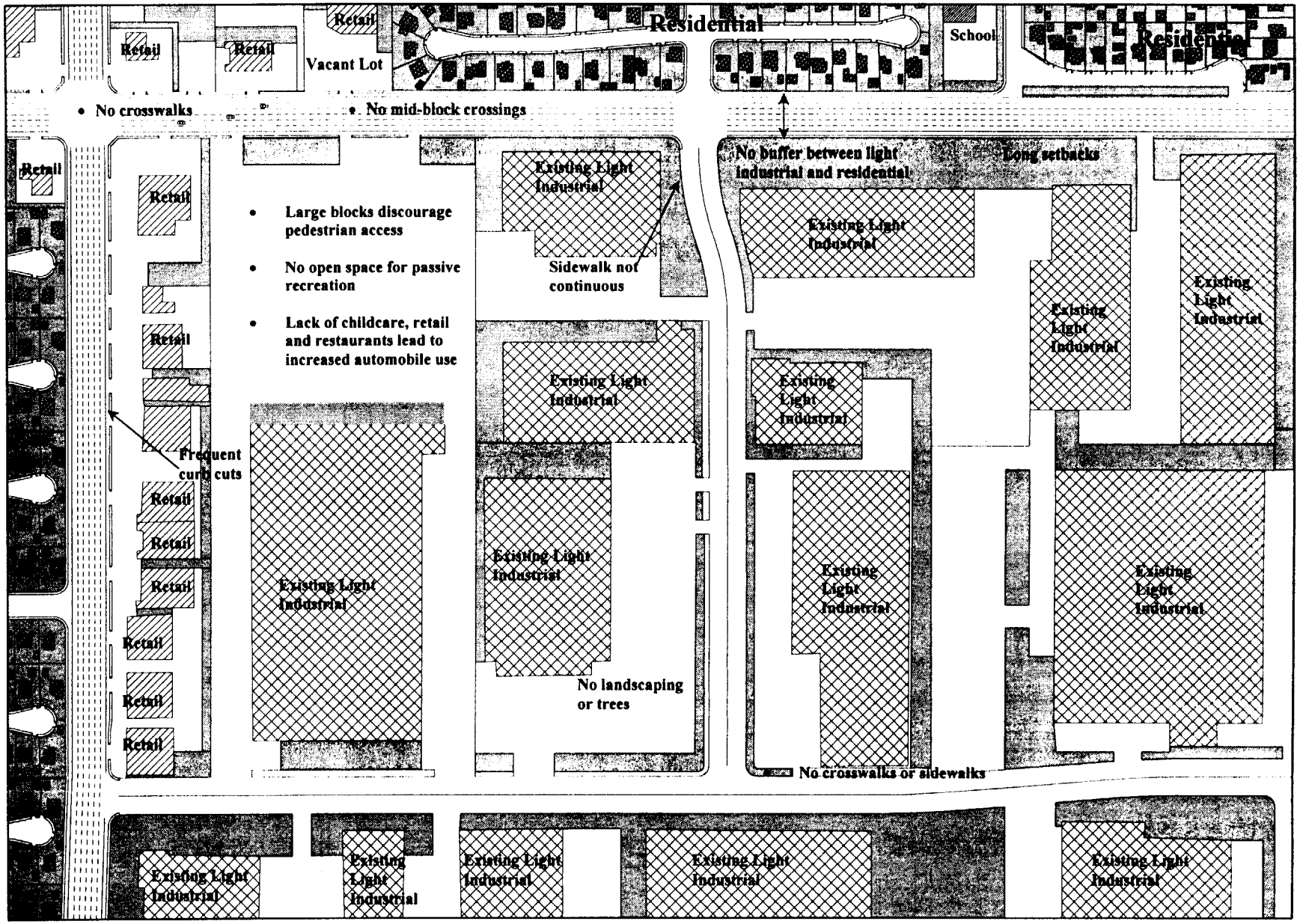
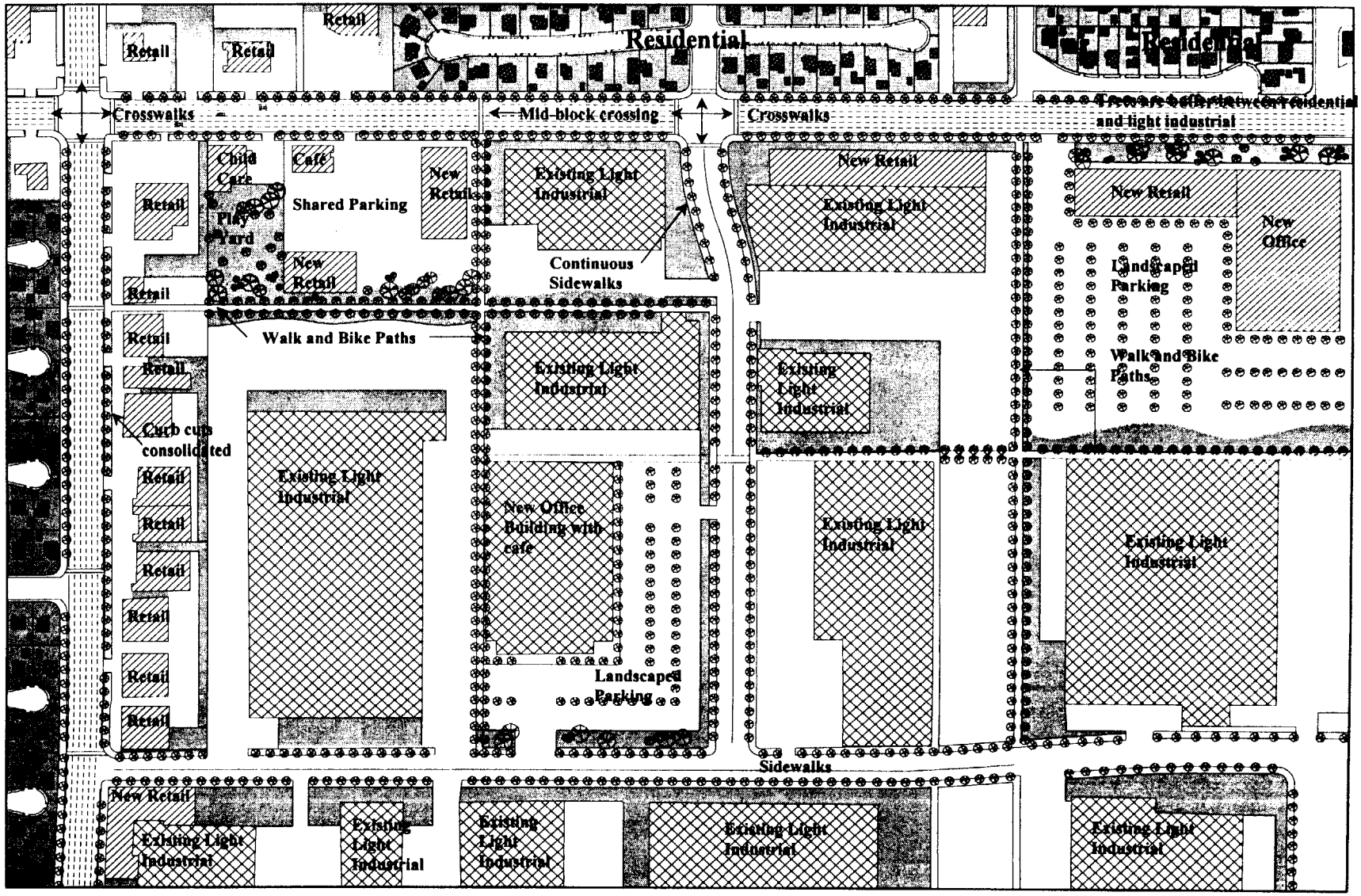


Figure 3.2 Future Conditions, Light Industrial Area



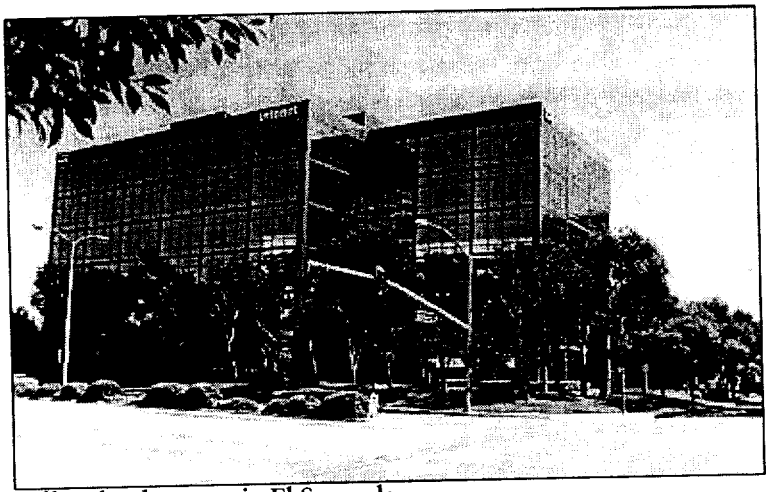
carry much lower traffic volumes than the commercial arterials and thus have the potential to provide a safe and pleasant walking and bicycling environment.

Density and Focus

Most light industrial areas are currently built at low densities and lack focused development that can function as an activity node. In planning for re-use and redevelopment of these areas, South Bay cities should identify locations where higher intensity development will be encouraged. In light industrial or office areas, an activity center would be a cluster of blocks with the potential to become an interconnected, multi-purpose hub. When site design and pedestrian infrastructure are improved within these hubs, workers can easily move by foot between one site and another for eating, shopping or business.

The areas abutting Green Line light rail stations should serve at the focus for higher intensity development. In many cities with rail systems, the area within a half-mile of the station receives special treatment for "transit-oriented development." Although ridership on the Green Line is currently low, the use of the system can be expected to increase as highway congestion grows and development occurs around other stations.

Office development and high density housing is particularly appropriate around Green Line stations, more so than large format retail. Low intensity uses requiring automobile access are not appropriate, including self-storage facilities, auto dealerships and repair, warehouses, trucking terminals, freight forwarders, and utility yards.



Office development in El Segundo

El Segundo currently allows higher density commercial development near their Green Line stations. In **Pasadena**, the Holly Street Village project was recently completed on the site of a future Blue Line transit station. The successful project features 358 rental units and street level retail.

Land Use Mixing

Land use mixing is an important component of livable communities. The appropriate mix of land uses in light industrial areas can vary considerably across the South Bay. In many cases, it will not be possible to achieve the same level of land use mix that can be created in commercial zones.

The important goal is to ensure that redevelopment occurs with at least some complementary uses. Rather than allowing these areas to be dominated by a single land use as they have in the past, cities should encourage a mix of retail, service and office uses, together with housing where appropriate.

In areas with a significant amount of office space or R&D, a variety of retail and services can benefit from the large number of daytime workers. These include business services such as copiers, stationers, communications and computer stores, personal services such as day care, cleaners, florists, photo shops and banks, and restaurants and cafes. All of these businesses can capture workers at lunch and possibly after work.

In many isolated office centers, workers who could otherwise take transit are forced to drive in order to stop at day care, buy their lunch or run errands after work. When these types of businesses are located in close proximity to offices, workers can access them without driving.

Emeryville, California provides a good example of how redevelopment can transform a light industrial area into a mixed use activity center. Located next to Oakland, **Emeryville** has historically been dominated by manufacturing, warehouse, transportation and utility uses. As development pressures have increased, the city has encouraged a dense mix of new uses while preserving much of the older light industrial building stock. The Park Avenue district is currently being developed into a multi-use city center. Older industrial buildings are being converted to high technology uses while new offices and hotels are being built on vacant properties. Two blocks away, big box retail, restaurants and apartments have been built on formerly industrial land.

An initial goal for land use mix in office areas would be the following, based on square footage:

- At least 50% office
- At least 10% retail
- At least 10% public and institutional
- At least 10% residential

In areas with a large amount of retail space, the goal should be to encourage other retail and services in a compact, walkable environment. For example, rather than allowing a

"big box" retail store to stand alone on a single block, the site should be developed with complementary uses such as cafes and small specialty retail. In areas with more intense retail development, movie theaters can provide a big source of patrons for neighboring retail and restaurants. Even though most shoppers will drive to these locations, being able to accomplish multiple tasks at one site will reduce automobile use and emissions.

A research study in Florida by Professor Reid Ewing confirms this. As described in Chapter 5, the study found that even in areas with little or no transit service, clustering of retail and services leads to reduced vehicle use because it allow drivers to accomplish multiple tasks in one trip.

Housing

Multi-family housing mixed with existing uses should be encouraged in some light industrial transition areas. This can help to alleviate the shortage of housing in the South Bay and provide a source of patrons for local restaurants, small retail and services that often struggle to survive if forced to rely on daytime workers alone.

The appropriate location for housing depends on the specific conditions of the community. Obviously, sites adjacent to heavy industry or sites with environmental contamination should not be developed with housing. Light Industrial zoning typically does not protect against uses that may be incompatible with housing. Many cities also feel that it is important to preserve industrial uses as a source of jobs. But a mix of infill housing with existing offices, R&D space and warehouses may be appropriate for areas that serve as a transition between industrial and commercial zones. There is a small but strong market niche for housing in semi-industrial areas, particularly among singles, artists and high technology workers. In addition, light industrial areas that are being transformed into high technology, office and R&D centers can become desirable locations for housing.

One of the first steps cities should take is to allow live-work units by right in office and R&D commercial zones. These uses are entirely compatible, and adding residents to an office area will add vitality and help support local retail and services.

In an interview with developer John Given of the CIM Group, he cited the importance of allowing live-work units by right in commercial zones. He pointed to two recent cases, one in **Hermosa Beach** and one in **Santa Monica**, where the developer was interested in building live-work lofts in an office project but was discouraged by the added round of permitting and review this would require.

3.3.2 Light Industrial Design

Light industrial site design typically discourages non-automobile travel through large setbacks and isolation in a sea of surface parking. Large blocks and an incomplete

sidewalk network makes walking between sites difficult. Street-facing loading docks are unattractive and further discourage pedestrian and bicycle access. There is a lack of attractive outdoor gathering areas. As there are often no restaurants, stores or service in these areas, workers are forced to drive elsewhere at lunch.

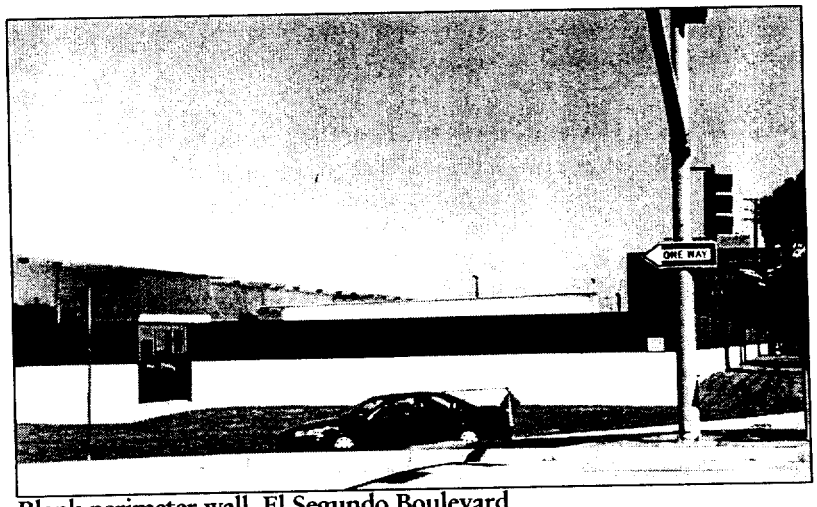
Layout

The large setbacks of light industrial areas represent underutilized land and provide opportunities for infill development. In cases where a light industrial building is being converted to another use, cities should encourage the development of vacant portions of the parcel.

Unused space and sites should be redeveloped into daytime uses that are supported by area workers and adjacent residents. If the parcel abuts a busy street and offers good visibility, new retail or services may be appropriate. If the parcel is located on a local street within a low density light industrial area, retail and services may not be viable and redevelopment should encourage office expansion or R&D use.

Whenever possible, it is important to focus development on underutilized land at the perimeter of a site and near intersections, rather than setback behind large parking lots.

When new office or R&D buildings are located adjacent to residential uses, the buildings should be oriented so that the entries, office areas, and pedestrian-scale amenities are on the exposed (residential) sides of the facility. Commercial buildings should conceal loading docks, roll-up doors, mechanical equipment, and areas with high vehicular activity. Visual clutter and dumpsters should be buffered from pedestrians and nearby residents.



Blank perimeter wall, El Segundo Boulevard

Many warehouse and light industrial facilities provide no outdoor seating or gathering areas for employees. Workers at these facilities on a break or lunch hour therefore

have the option of standing in the parking lot or driving somewhere else if they want to be outdoors. Any redevelopment or re-use of these sites should require the inclusion of attractive plazas and outdoor eating areas. The existing long setbacks may provide a good location for a plaza and for the creation of pedestrian paths.

Access

Most light industrial area sites have been designed solely for automobile and truck access. Warehouses, R&D and offices typically locate the only building entrance off the parking lot, with no connections to neighboring parcels or to the sidewalk system.

Redevelopment or reuse of these sites should ensure that access is provided for alternative travel modes. Internal path systems, particularly on large parcels, and connections between neighboring sites and sidewalks should be required. Landscaping, in particular shade trees, should be required along paths where possible. These improvements should be mandatory for all new or substantially rebuilt developments.

3.3.3 Large Format Retail Design

Developers of large format or "big box" retail are attracted to light industrial areas because of the relatively large parcels. Big box developments are not typically designed in ways that support livable communities but rather in ways that discourage non-automobile travel. Careful attention to building and site design, however, can lead to significant improvements.

Regardless of design, most patrons of big box stores will continue to access the site by automobile. However, as development pressures increase, light industrial areas will experience increases in both housing and employment density. This presents opportunities for big box projects to compliment the surrounding community rather than turn their back on it.

Building Design

Large, boxy buildings with flat, blank walls should be avoided. Buildings should be designed with articulation, i.e. projecting and recessed elements, to break up long flat facades. Changes in height, particularly at building corners or entrances, also create more inviting and interesting buildings. Buildings should have a defined front that faces the pedestrian access routes and includes the principal entrance.

Cities should establish design guidelines that describe recommended ways to articulate large, boxy buildings. One rule of thumb is that horizontal masses should not exceed a height to width ratio of 1:3 without some substantial variation in massing, such as changes in height or projections and recessions. Another general rule is that facades over 75 feet long should incorporate projections or recessions having a depth of at

least 3 percent of the length of the façade and extending at least 20 percent of the length of the façade.

Additional design features should also be encouraged, particularly around the building entrance. Cities should develop design guidelines for large format retail that require at least three of the following features on the building front:

- Canopies, porticos or overhangs
- Recesses/projections
- Arcades or arches
- Raised parapets with cornices over the doorway
- Peaked roof forms
- Outdoor patios
- Display windows
- Integral planters or wing walls
- Architectural or ornamentation detail integrated into the building

When rear or side facades are visible from adjoining properties or from public streets, they should include the same architectural features as the main front façade.

Tucson, Arizona has design guidelines for large format retail, strip mall, and light industrial developments. The large format retail and strip mall guidelines include: 1) separation of pedestrian and vehicle access, 2) distinct pedestrian paths, 3) convenient connection of pedestrian paths and main corridors and side streets, 4) a prohibition of "pad" buildings interfering with pedestrian paths, 5) a reduction in curb cuts and 6) special design considerations to ensure that drive-throughs are more pedestrian friendly.

Access

New large format retail should always include good pedestrian, bicycle and transit access to the site. Even when these establishments are built in low density industrial areas surrounded by vacant parcels, the design should anticipate higher intensity redevelopment.

A pedestrian walkway should extend from the adjoining street to the largest building on the site and to any pad buildings. Features such as an arcade or canopy at the customer entrance add visual interest and help define the walkway terminus. Where pedestrian walkways cross vehicle lanes, textured or colored paving should be used as a marker. Parking lots should be designed with pedestrian access routes and landscaping.

Poor pedestrian access and building design, Redondo Beach

One good way to improve big box site design and create more pedestrian activity is to build a plaza at the building entrance. A landscaped plaza complete with outdoor seating and a café will encourage shoppers to linger before or after visiting the primary store. Over time, this space can be better linked with neighboring retail, office and residential properties.

Englewood, Colorado is arranging for the redevelopment of a large abandoned shopping mall into the Town Center with a mix of retail, offices, entertainment, housing and public buildings. The development will include a large WalMart and a 20-screen theater. Rather than surrounding these buildings with uninterrupted parking lots, the site will be crisscrossed by several small, tree-lined access streets that break up the surface parking and provide good pedestrian and bicycle access.

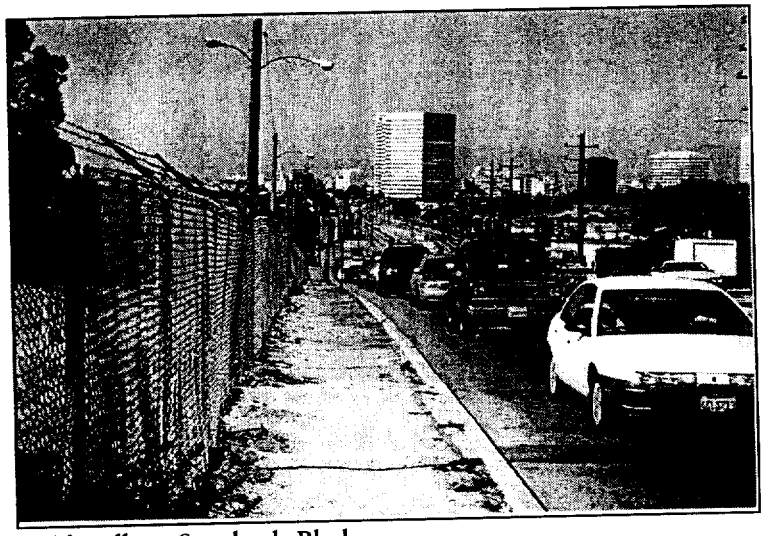
3.3.4 Sidewalks

The pedestrian environment in the South Bay's light industrial areas is typically unattractive and often perceived as unsafe. Pedestrians often must walk long, indirect routes to get to their destination. The sidewalk network is often incomplete because some streets lack sidewalks and others have sidewalks on only one side.

Where sidewalks do exist, they are bordered by large blank walls, chain link fences and large parking lots. There is no curb side parking or parkways buffering pedestrians from traffic. Pedestrian area lighting is poor. The green space that does exist, usually in the form of setbacks, is "passive" and not designed for sitting or walking.

Despite the low density and sometimes unpleasant environment, people do walk in industrial areas. Observations in the South Bay revealed commuters walking from bus stops, workers walking at lunchtime, and children walking from school in and around

light industrial areas. If these areas are to be transformed into more attractive, higher intensity, multi-use areas, it is important that they have a complete, convenient and attractive sidewalk network. Cities should invest in sidewalk improvements or, where possible, negotiate with developers to make the necessary changes.

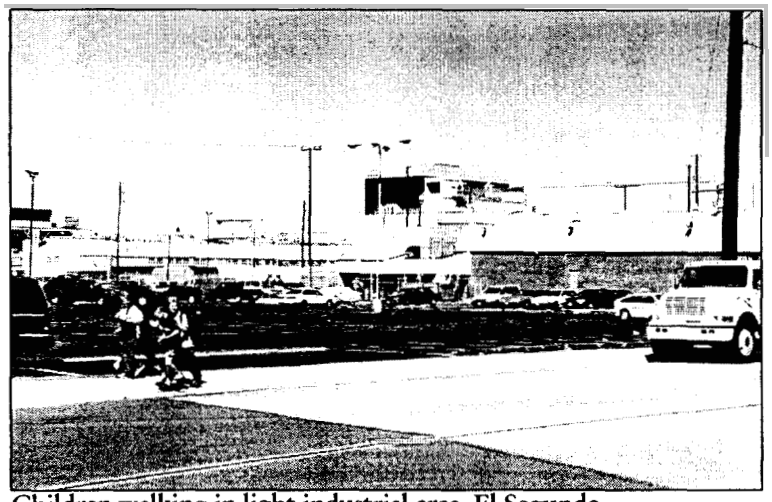


Sidewalk on Sepulveda Blvd.

Despite the low density and sometimes unpleasant environment, people do walk in industrial areas. Observations in the South Bay revealed commuters walking from bus stops, workers walking at lunchtime, and children walking from school in and around light industrial areas. If these areas are to be transformed into more attractive, higher intensity, multi-use areas, it is important that they have a complete, convenient and attractive sidewalk network. Cities should invest in sidewalk improvements or, where possible, negotiate with developers to make the necessary changes.

At a minimum, the sidewalk network should be continuous on both sides of the street. Cities should identify locations where sidewalks are discontinuous. Sidewalks must also connect directly to building entrances and interior pathway systems. At some office developments, sidewalks encircle the parcel but provide no connection to the building entrance. Pedestrians should not be forced to follow a circuitous route through the parking lot in order to access the building. The sidewalk network can also be improved significantly with the addition of street trees and a few amenities.

Studies have shown that a complete and connected sidewalk network does encourage more people to walk. A study in the **Seattle** area compared neighborhoods that were similar in population density, income, land use type and mix, and area, but differed in block size and the extent of the sidewalk network. In the neighborhoods with smaller blocks and a complete and continuous sidewalk system on both sides of the street, roughly three times as many pedestrians were observed per hour as in neighborhoods with large blocks and incomplete sidewalks (see Chapter 5).



Children walking in light industrial area, El Segundo

As in arterial commercial areas, sidewalk interruptions like curb cuts should be minimized. Sidewalk paving should continue across any driveway, rather than extending the parking lot pavement out to the street (See Figure 3.3). By designing vehicle access routes with small turning radii, vehicles are forced to drive slowly into and out of parking lots which reduces the chances for accidents with pedestrians.

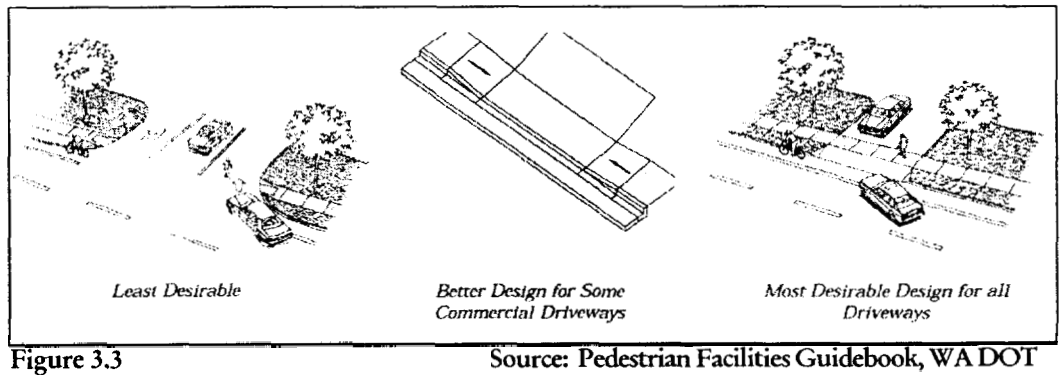


Figure 3.3 Source: Pedestrian Facilities Guidebook, WA DOT

3.3.5 Parking

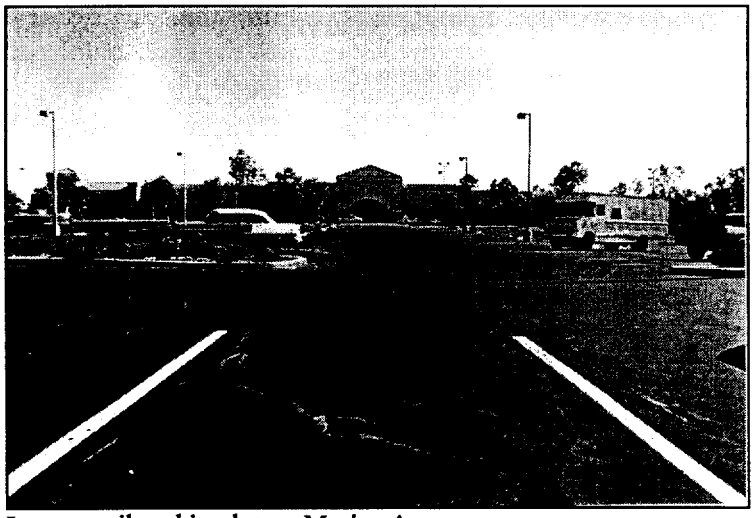
The typical light industrial and large format retail development has large surface parking lots that are unattractive and lack trees and other landscaping. These lots are designed for automobile access only and discourage those arriving by foot, bicycle or transit. When they offer no structure or visual interest at the street, these lots help to perpetuate the low density, underutilized feel of the neighborhood. Large, treeless parking lots also contribute significantly to the urban heat island effect, as discussed in Chapter 5.

Surface Parking

Ideally, parking should be located behind the main building or to the side. In light industrial areas, creating and preserving street fronting buildings will often not be as feasible as on arterial streets. In light industrial areas with older building stock that does create a street wall, however, this form should be strengthened by requiring that any new parking be placed behind redeveloped buildings.

When surface parking lots are constructed, the goal is to avoid an unbroken sea of asphalt between the street and the building. Large parking lots should be broken up into smaller lots, interspersed with pedestrian pathways and pad buildings. Extensive tree planting should be required in all new parking lots. Cities should set a ratio of trees to new parking spaces – some cities require one tree per every four spaces.

Albuquerque, New Mexico has established design guidelines for large surface parking lots. They require that new lots be sub-divided into 50 space units, each of which is traversed by a tree-lined pedestrian walkway. Multiple parking units can be grouped together, but each must have the required landscaping and pedestrian pathway.



Large retail parking lot on Marine Avenue

The City of **Los Angeles** requires that a sufficient number of trees be planted such that 50 percent of new surface parking lots will be shaded within 10 years.

If light industrial areas are experiencing development pressures and are located in areas with potential for greater pedestrian activity, cities should encourage retrofitting existing parking lots. The addition of landscaping and pedestrian paths will help to improve non-vehicle access to the site and within the site. Developing pad buildings at the lot corners can help to define the street wall and lend cohesion. Over time, higher intensity development can replace older buildings and a parking structure can be added. This progression is illustrated in Figure 3.4.

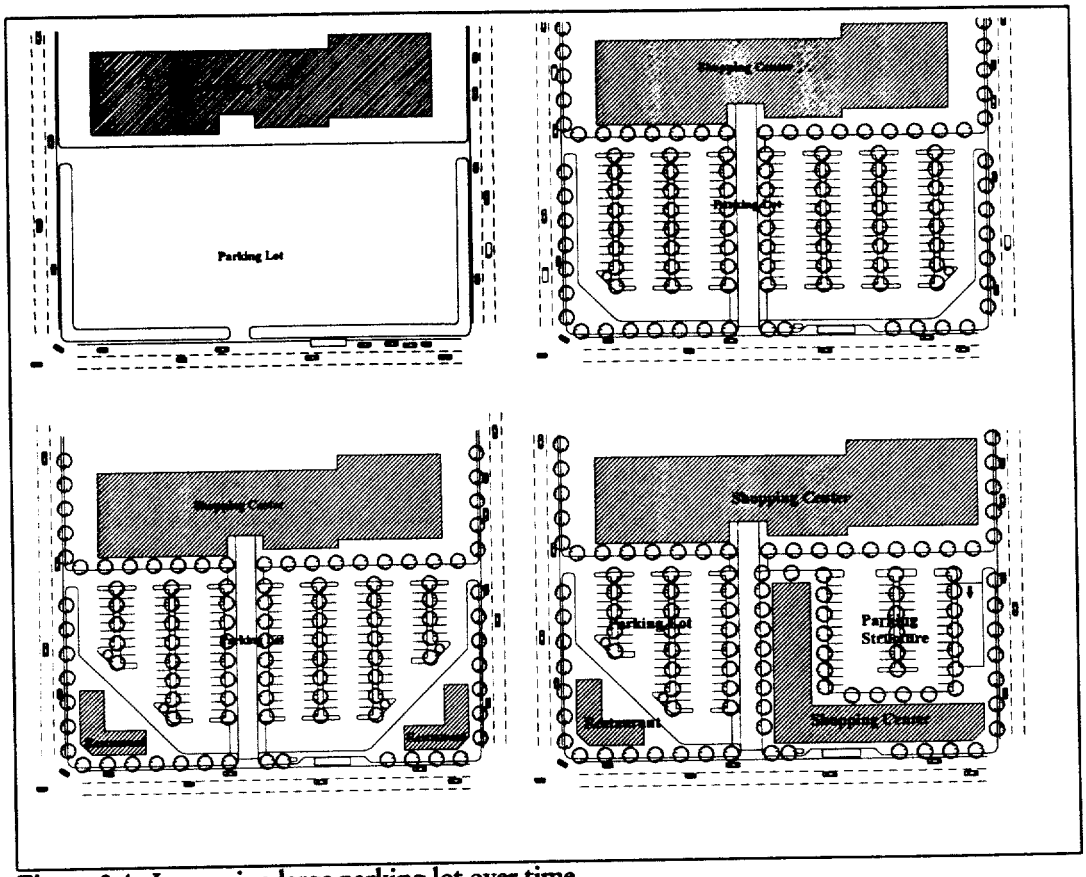


Figure 3.4: Improving large parking lot over time.

Structured Parking

Parking structures and subterranean parking are preferable to surface parking lots, but are not feasible in most light industrial areas because of the high cost. There may, however, be opportunities to develop parking structures in areas with higher density office development.

Care must be taken so that the parking structure does not detract from the pedestrian environment and urban design. Parking structures should be located behind buildings, not adjacent to principal sidewalks or plazas.

Several of the office developments in northeast El Segundo feature parking structures.

Shared Parking

Shared parking occurs when two or more establishments share the same parking spaces. By taking into account differing peak parking demands, shared parking areas reduce the total number of spaces required compared with simply adding together the

parking requirements of each individual land use.

Light industrial areas can offer good opportunities for shared parking. For example, the peak demand for office parking occurs during weekdays while large format retail parking peaks on weekends and evenings. Cities should formalize procedures for shared parking and encourage it wherever possible. (See Section 4.1.4 for more on shared parking implementation.)

3.3.6 Streets

Streets within light industrial areas are usually designed solely for auto and truck use. Many of the streets are wide, with long blocks and a lack of sidewalks, crosswalks and other pedestrian amenities. Some carry heavy traffic volumes, though others have relatively little traffic. Trucks make up a significant portion of the vehicles in areas of warehouses, truck terminals and freight forwarders. Pedestrians find it difficult to cross major streets. A combination of traffic calming and crosswalk improvements is needed to make these streets more inviting to pedestrians.

Traffic Calming

Traffic calming refers to a variety of physical alterations to a street that aim to reduce vehicle speeds, increase safety and improve the environment for pedestrians and bicyclists. Specific traffic calming methods are described in Section 2.3.7.

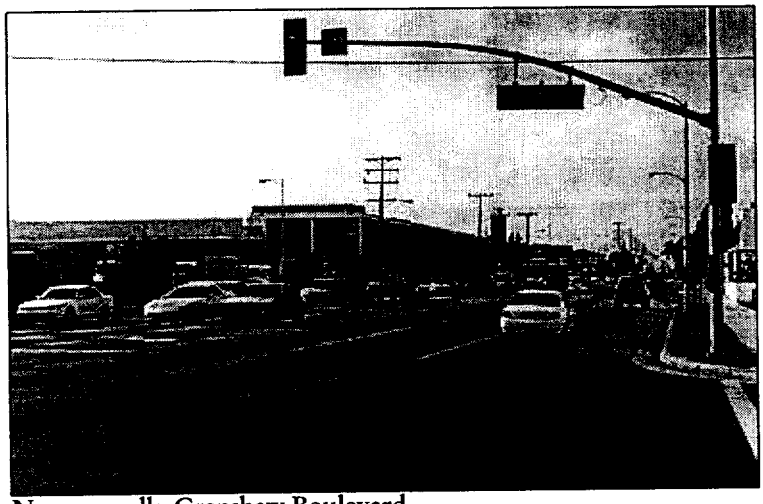
In general, speed humps are not appropriate for commercial streets and should not be used in light industrial areas. Similarly, traffic circles and diverters are generally used only on local residential streets.

The most appropriate traffic calming devices for light industrial areas are bulb-outs and mid-block chokers. Bulb-outs can improve pedestrian safety and convenience by reducing the crossing distance at intersections. Since light industrial areas often include wide streets, bulb-outs can be a good way to encourage pedestrian movement between sites at higher intensity activity nodes. Mid-block chokers can be useful as a means to slow traffic and improve pedestrian crossing on long, wide blocks. When considering bulb-outs or chokers for light industrial areas, it is important to consider the road geometry needed for large trucks.

Crosswalks

Crosswalks are also discussed in detail in Section 2.3.7. Many light industrial areas lack crosswalks and they are a necessary element of a more pedestrian-friendly environment. All intersections should allow 4-way pedestrian crossing in crosswalks that are 8 feet wide and, at a minimum, marked with highly visible striping. Pedestrian signal actuators must be installed at signalized intersections if the traffic signal is not on a fixed cycle. Mid-block crossings may be needed in light industrial areas due to the

long blocks.



No crosswalk, Crenshaw Boulevard

3.3.7 Alternative Transportation

In most South Bay light industrial areas, getting around by transit or bicycle is difficult and unpleasant. Due to the low densities, bus transit service is typically infrequent at best or non-existent. The transit stops are typically poorly integrated with surrounding land uses. In areas served by the Green Line, pedestrian access to and from the stations is poor and low density surrounding uses discourage ridership.

Bicycle travel is hindered by a lack of bike lanes and difficult crossing at major arterials. The relatively high portion of truck traffic on some streets is often perceived as unsafe by bicyclists. Bicycle parking is difficult to find or non-existent. When bike racks do exist, they are often outdated designs that only allow the locking of one wheel.

Bus/Rail Transit

If light industrial areas are redeveloped with higher intensity offices, cities should ensure that bus lines serve them. This requires coordination either with the city's own transit agency (such as **Torrance** or **Gardena**) or with the MTA. Bus stops often need to be made more attractive and safe through the addition of benches, lighting, and shelters. While these improvements are typically done by the transit agency itself, cities can help by working closely with the transit agency and, if possible, arranging for outside funding.

The Green Line station areas present a unique opportunity in the South Bay. Four Green Line stations are located in the northwestern portion of the subregion – three in **El Segundo** and one on the border of **Hawthorne** and **Redondo Beach**. The land use around most of these stations is light industrial.

Although the light rail line is currently underutilized, cities should lay the foundation now for higher density development around the stations. The Metro rail system will become increasingly attractive in coming years as congestion grows and infill development increases around other stations.

In **El Segundo**, a large office and hotel development is planned just south of the Mariposa/Nash Green Line station on vacant industrial land. The project, on Nash Street, will feature two offices, two hotels and a professional sports facility.

Cities should zone for higher density development in roughly a half-mile radius around the stations. Office uses and multi-family housing should be encouraged in these areas, together with the complementary retail and services described in Section 3.3.1. Low intensity, auto-oriented uses should be prohibited. Parking requirements can also be reduced. For example, **Berkeley** reduces parking standards for developments within a quarter-mile of rail transit stations.

Most importantly, new development in the Green Line station areas should be built with direct and attractive pedestrian connections to the station. Transit patrons should not be forced to walk circuitously to the street and then through a parking lot to get to a building entrance. Transit riders should be encouraged and rewarded by buildings that embrace the station rather than turn their back to it.

Bicycles

Bicycle facilities in light industrial areas of the South Bay need improvement. Section 2.3.7 describes some specific improvements to bicycle routes and parking. Developing bike routes in light industrial areas presents some particular challenges and also opportunities.

One challenge is to provide safe bicycle routes in places with considerable freight traffic. Large trucks are intimidating to bicyclists, and bike routes should generally not be located on truck routes. Railroad tracks can be a dangerous safety hazard if they allow bicycle wheels to get stuck. On the other hand, the relatively wide streets and lack of on-street parking can make light industrial areas good locations for bike routes (Figure 3.5).

Requiring bicycle parking is crucial, as many light industrial sites currently have none. Details on bicycle parking strategies are in Section 2.3.7. Large format retail, offices and R&D will attract bicycle travelers if safe routes exist and convenient bike parking is available.

All cities should require bicycle parking as part of any new development or major re-use. **Scottsdale, Arizona** requires one bicycle parking space for every 10 vehicle spaces, with a minimum of 4 bike spaces. **Tucson, Arizona** requires bicycle parking as a percentage of the vehicle spaces, with different ratios for each land use.

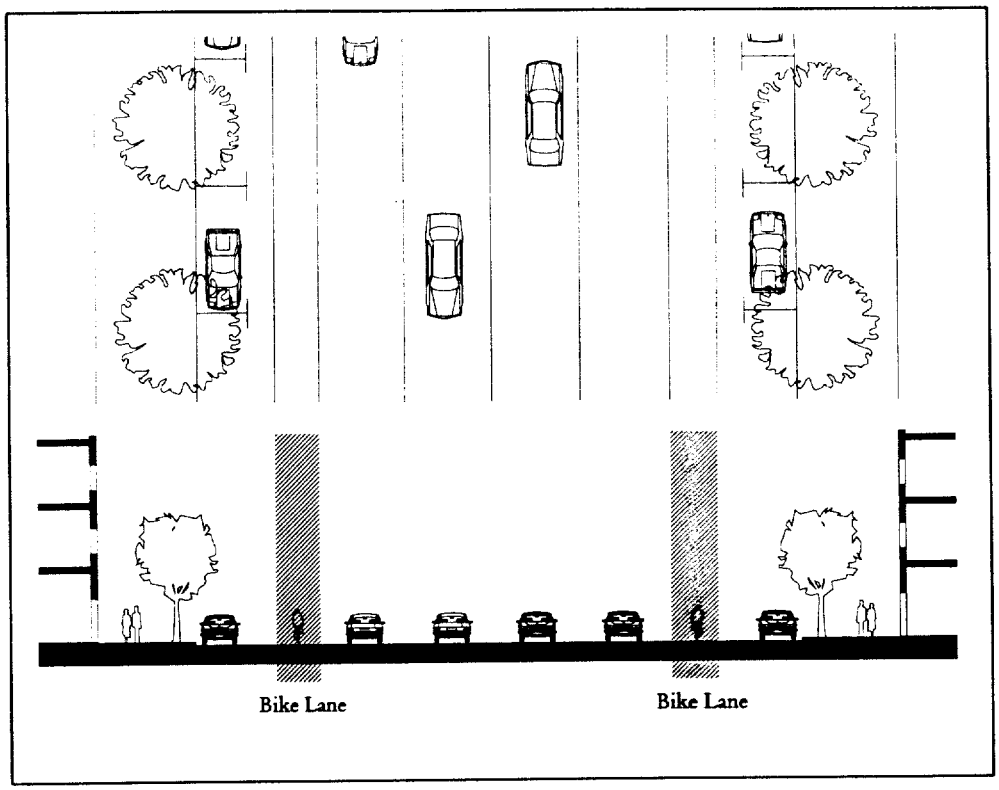


Figure 3.5: Class II Bike Lanes